AF IFW 2837

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of WAYNE M. SCHOTT	Atty. Docket US 010480

Serial No.:	09/973,338	Group Art Unit:	2837
Filed:	October 9, 2001	Examiner:	Renata D. McCloud

Title: BASS REFLEX ACOUSTICAL ENCLOSURE WITH TWO SPEAKERS TO ENHANCE ACOUSTICAL PERFORMANCE

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANT'S BRIEF

Sir:

Further to the Notice of Appeal received February 28, 2005, Appellant submits this brief pursuant to 37 C.F.R. § 41.37.

Please charge Deposit Account No. 14-1270 in the amount of $500.00 in payment of the fee for filing this brief; and charge any additional fees except for the Issue Fee, and credit any overpayment, to Deposit Account No. 14-1270.

08/02/2005 EFLORES 00000084 141270 09973338
02 FC:1402 500.00 DA

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that, on the date set forth below, this correspondence, and all correspondence referred to herein as being transmitted or the like herewith, is being:

[ ] transmitted to the United States Patent and Trademark Office, Fax No. 703-872-9306 (_ pages)

[X] deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner For Patents, PO Box 1450, Alexandria, VA 22313-1450.

By: _____ Date: July 28, 2005
Steven R. Petersen

I. REAL PARTY IN INTEREST

The real party in interest in this application is Koninklijke Philips Electronics N.V.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-20 are pending in this application.

Claims 1-20 are rejected.

Claims 1-20 are appealed.

IV. STATUS OF AMENDMENTS

No amendments were filed subsequent to final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The invention relates to an acoustical enclosure having first and second chambers, and first and second speakers. The subject matter defined in each of the independent claims involved in the appeal may be concisely explained as follows.

The invention is directed toward an acoustical enclosure that includes a chamber divided by a partitioning wall into first and second chambers; a first speaker mounted to the partitioning wall, so as to be coupled on one side to the first chamber and on the other side to the second chamber; a second speaker mounted to an exterior wall of the first chamber; and a vent in an exterior wall of the second chamber. Embodiments are shown in Figure 3 and Figure 6; these differ in that partitioning

wall 320 of Figure 3 includes a vent 380, whereas partitioning wall 620 of Figure 6 does not include such a vent. The independent claims read on both figures, and will be described with respect to Figure 3.

In the embodiment of independent apparatus claim 1, an acoustical enclosure 300 includes a speaker box 310 comprising walls (including wall 370 and wall 390) that enclose an acoustic chamber. Partitioning wall 320 divides the acoustic chamber into a first chamber 330 and a second chamber 340. Wall 390 comprises portions that form an external vent 395 to second chamber 340. A first speaker 350 is mounted within partitioning wall 320, so that a front portion of first speaker 350 has access to first chamber 330 and a back portion of first speaker 350 has access to second chamber 340. A second speaker 360 is mounted within one of the walls (wall 370) that enclose the acoustic chamber, so that a front portion of second speaker 360 has access to the air outside speaker box 310 and a back portion of second speaker 360 has access to first chamber 330. (*Page 9, line 4 - page 10, line 12; Figure 3.*)

The embodiment of independent apparatus claim 9 includes all of the limitations of claim 1, as described above. It further includes the limitation that the range of low frequency response of the acoustical enclosure 300 is approximately thirty Hertz. (*Page 8, line 12 - page 9, line 3; page 12, line 18 - page 13, line 5; Figure 4.*)

In the embodiment of independent method claim 11, a method for enhancing acoustical performance of a dual chamber acoustical enclosure 300 by extending a range of low frequency response of said dual chamber acoustical enclosure to approximately thirty Hertz *(Figure 4)* includes placing a first speaker 350 within a partitioning wall 320 that separates a first chamber 330 and a second chamber 340 of acoustical enclosure 300, wherein a front portion of first speaker 350 has access to first chamber 330 and a back portion of first speaker 350 has access to second chamber

340; placing a second speaker 360 within a wall 370 of first chamber 330, wherein a front portion of second speaker 360 has access to air outside the acoustical enclosure 300 and a back portion of second speaker 360 has access to first chamber 330; wherein at least one wall 390 of the walls that enclose the acoustic chamber 100 comprises portions that form an external vent 395 to second chamber 340. (*Page 9, line 4 - page 10, line 12; Figure 3.*)

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,437,539 to Festa.

B. Claims 1-20 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,850,460 to Tanaka et al. ("Tanaka").

C. Claims 1-20 are alternatively rejected under 35 U.S.C. § 103(a) as unpatentable over Tanaka.

VII. ARGUMENT

A. Claim 1 Is Not Anticipated by Festa

A prior art reference anticipates the claimed invention under 35 U.S.C. §102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. MPEP §2131; In re Bond, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. MPEP §2131; In re Donohue, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985).

Although Festa discloses a speaker enclosure having some elements used in the claimed invention, including chambers, speakers, and vents, Festa does not disclose such elements arranged as claimed. In particular, as set forth below, Festa does not disclose "a second speaker mounted within one of said walls that enclose said acoustic chamber, wherein a front portion of said second speaker has access to air outside said speaker box and a back portion of said second speaker has access to said first chamber." While applicant's invention is directed toward bass speakers and bass response, Festa's speaker system is a full-range, three-way system with bass, midrange, and tweeter speakers. There is no reason to expect such midrange or tweeter speakers to be disposed so as to assist in extending the bass response of the bass speaker. In Festa, they aren't and they don't.

Festa discloses one embodiment that is illustrated in figures 1-4. The rejection identifies Festa's walls 14, 16, 18, 20, 26, and 28 as the claimed walls that enclose an acoustic chamber, wall 30 as the claimed partitioning wall, chamber 34 as the claimed first chamber, the chamber shown in Fig. 2 as adjacent to wall 20[1] as the claimed second chamber, vent 40 as the claimed external vent to the second chamber, and bass speaker 35 as the claimed first speaker mounted within the partitioning wall. Such a structure is similar to the prior art structure shown in applicant's Figure 1.

However, the rejection then identifies Festa's speaker 50 as the claimed second speaker. That is erroneous, because Festa's speaker 50 is not "mounted ... wherein ... a back portion of said second speaker has access to said first chamber." In multi-way speaker design, midranges and tweeters are commonly of a sealed-back design in order, among other things, to prevent high-pressure bass signals within a cabinet from impinging on their cones. Festa's design adopts that practice: Festa's tweeter 50 is "sealed so as to prevent any emanating sound from entering into chamber 34." (Col. 3,

[1] Although the rejection did not cite a reference numeral for this chamber, it appears that Festa refers to this chamber as rearward bass-reflex chamber 32 identified in Fig. 3 and described at col. 3 lines 2-11.

lines 40-47; see also col. 1, lines 38-41.) By its very terms, Festa omits an element of claim 1. The rejection cannot stand.

B. Claims 1-20 Are Not Anticipated by Tanaka

Tanaka also discloses various speaker enclosures having some elements used in the claimed invention, including chambers, speakers, and vents. However, Tanaka also does not disclose such elements arranged as claimed.

The rejection of the independent claims relies on Tanaka Fig. 15, which shows a prior art bass speaker system of a type known as a "bandpass" or "kelton" speaker, over which Tanaka's invention is an improvement. As described at col. 1 lines 31-51, the inside of the bandpass-type speaker enclosure 103 of Fig. 15 is separated by an internal speaker divider 104 into a back cavity 105 and a front cavity 106. A driver unit 101 is mounted on the internal speaker divider 104 and a passive radiator 102 is mounted on the front enclosure panel 103a such that bass sounds are projected from the passive radiator 102. Driver unit 101 and passive radiator 102 create an acoustic transducer in the front cavity 106. Such systems are subject to substantial vibration, and Tanaka's invention addresses that problem by using multiple drivers and multiple passive radiators, where the drivers are disposed and driven in mutual opposition so that the vibration-inducing forces tend to cancel. (See abstract.)

It should be noted at this point that applicant and Tanaka use the term "speaker" differently. Tanaka generally uses "speaker" to refer to an "enclosure" having one or more "drivers," i.e., electroacoustic transducers, mounted in it. Applicant uses "speaker" to mean electroacoustic transducer; refers to the enclosure as a "speaker box;" and refers to a speaker box with a speaker mounted in it as an "acoustical enclosure."

The anticipation rejection is improper because Tanaka's element 102 is not a "speaker" and therefore does not provide the claimed "second speaker." Tanaka's element 102 is a "passive radiator." Applicant used the term "speaker" in an entirely conventional way, to mean an electroacoustic transducer, a device that converts electrical signal energy into acoustic energy, and shorthand for "loudspeaker." That usage is implicit in the specification. For instance, the specification states that the internal (first) and external (second) speakers are electrically coupled in phase (e.g., page 3 lines 14-15, page 4 lines 5-6). That is possible only with electroacoustic transducers, and not with passive radiators.

The rejection provides no basis for the assertion that Tanaka's passive radiator 102 satisfies the "second speaker" limitation in all the claims. Such an assertion is plainly untenable. A passive radiator is just that -- passive. It no more "speaks" than a ventriloquist's dummy does.

Moreover, the rejection acknowledges (at page 4) that Tanaka does not "explicitly" disclose the claimed external vent to the second chamber. Tanaka does not disclose the claimed vent implicitly or inherently, either, and accordingly the anticipation rejection is improper on its face. Except for the vent, the rejection relies only on the prior art structure shown in Tanaka Fig. 15, and makes no specification references. For the vent, the rejection relies on Tanaka at col. 7 line 60 - col. 8 line 2. That section is a toss-in that cursorily and cryptically describes variations that can be made to the embodiment that had just been described. That section does not contain any reference numerals, but in context clearly relates only to the first embodiment of Tanaka's invention shown in Fig. 1 and described at col. 5 line 59 - col. 8 line 34. Thus, Tanaka does not disclose providing a vent in the Fig. 15 embodiment upon which the examiner based the rejection.

Independent claims 9 and 11 contain subject matter analogous to claim 1, and are not anticipated by Tanaka for the reasons stated above with respect to claim 1.

Dependent claims 2, 4, 6, 8, 10, 13, 15, 16, 18, and 20 recite that the partitioning wall contains an uncovered internal vent between the first chamber and the second chamber. These claims were also rejected based on Tanaka's "variations" disclosure at col. 7 line 60 - col. 8 line 2. Despite that fact that the cited disclosure has no reference numerals but clearly refers to the Fig. 1 embodiment, the statement of the rejection inserted reference numerals 104, 106, and 105 for the partitioning wall, first chamber, and second chamber as though the "variations" disclosure pertained to the prior art embodiment of Fig. 15. Aside from the misattribution of the cited text, the statement of the rejection completely overlooks that what the cited text states is "... disposing the port in a divider placed between the passive radiator and driver unit within the front cavity..." What the subject claims recite, and what is shown in applicant's Fig. 3 embodiment, is a partitioning wall between the first and second chambers that contains both the first speaker and the uncovered internal vent. Tanaka's variation states something entirely different -- an additional wall containing the port, the additional wall containing the port being placed in the front cavity between the wall in which the passive radiator is mounted and the wall in which the driver is mounted. Tanaka does not disclose the additional limitation of the subject claims, and thus fails to anticipate them.

Claims 3, 12, and 19 recite that the first speaker and second speaker are connected in phase electrically. The statement of the rejection cannot support anticipation because it refers to " said first speaker (101) and said second speaker (102)", when Tanaka's element 102 is a passive radiator that has no electrical drive and therefore cannot be connected electrically in phase with anything. The statement of the rejection also includes a text reference to col. 1 line 65 - col. 2 line 12. That reference is completely off the mark because it relates the equivalent electrical circuit models of Figs. 16 and 17, not to the electrical aspects of real speakers. The text reference to col. 6 lines 35 - 42 in the statement of the rejection states, with reference to the Fig. 1 embodiment, that the first and

second driver units and the first and second passive radiators operate in the same phase and with the same frequency response. This passage cannot refer to being connected in phase electrically, as claimed, because the passive radiators are passive, and are not connected electrically. The citations cannot support an anticipation rejection of the subject claims.

Claims 5, 14, and 17 recite that a volume of the first chamber is effectively increased due to the presence of the second speaker. Again, the stated grounds cannot support an anticipation rejection because item 102 is a passive radiator, not a second speaker as claimed. Moreover, the cited text at col. 2 lines 12-20 states nothing regarding an effective increase in the volume of a first chamber; it merely discusses the properties of the acoustic transformer of the prior art Fig. 15 bandpass speaker modeled in the equivalent circuits of Figs. 16 and 17.

C. Claims 1-20 Are Not Obvious In View Of Tanaka

As to independent claims 1, 9, and 11, the statement of the rejection asserted that the motivation to put vents in the Tanaka structure was to reduce vibration. Tanaka's object is to reduce vibration, in the context of a bandpass speaker, but the mechanism disclosed in Tanaka for doing so is the oppositely directed movements of opposed drivers. No purpose whatsoever is disclosed by Tanaka for the ports discussed in the "variations" section at col. 7 line 60 - col. 8 line 2. The statement of the rejection gives no clue as to how including a vent in the Tanaka structure would reduce vibration. It is submitted that the rejection is fatally defective in failing to provide any rational basis for modification of Tanaka to form the claimed invention.

As to the dependent claims, the foregoing arguments show that the reference does not disclose the claimed limitations. The statements of the rejections do not state any motivation to modify Tanaka to form the claimed inventions. Accordingly, they cannot support an obviousness rejection.

CONCLUSION

For the foregoing reasons, Applicant requests that the Board reverse the rejection of claims 1-20.

Respectfully submitted,

Steven R. Petersen, Reg. No. 31,287
Attorney
(914) 333-9640

VIII. CLAIMS APPENDIX

1. An acoustical enclosure comprising:

a speaker box comprising walls that enclose an acoustic chamber;

a partitioning wall coupled to interior surfaces of said walls of said speaker box, said partitioning wall dividing said acoustic chamber into a first chamber and into a second chamber; wherein at least one wall of said walls that enclose said acoustic chamber comprises portions that form an external vent to said second chamber;

a first speaker mounted within said partitioning wall, wherein a front portion of said first speaker has access to said first chamber and a back portion of said first speaker has access to said second chamber; and

a second speaker mounted within one of said walls that enclose said acoustic chamber, wherein a front portion of said second speaker has access to air outside said speaker box and a back portion of said second speaker has access to said first chamber.

2. An acoustical enclosure as claimed in Claim 1 wherein said partitioning wall comprises portions that form an uncovered internal vent between said first chamber and said second chamber.

3. An acoustical enclosure as claimed in Claim 1 wherein said first speaker and said second speaker are connected in phase electrically.

4. An acoustical enclosure as claimed in Claim 3 wherein said partitioning wall comprises portions that form an uncovered internal vent between said first chamber and said second chamber.

5. An acoustical enclosure as claimed in Claim 1 wherein a volume of said first chamber is effectively increased due to the presence of said second speaker within one of said walls that enclose said acoustic chamber.

6. An acoustical enclosure as claimed in Claim 5 wherein said partitioning wall comprises portions that form an uncovered internal vent between said first chamber and said second chamber.

7. An acoustical enclosure as claimed in Claim 1 having a low frequency response range that extends to approximately thirty Hertz.

8. An acoustical enclosure as claimed in Claim 7 wherein said partitioning wall comprises portions that form an uncovered internal vent between said first chamber and said second chamber.

9. An acoustical enclosure comprising:

a speaker box comprising walls that enclose an acoustic chamber;

a partitioning wall coupled to interior surfaces of said walls of said speaker box, said partitioning wall dividing said acoustic chamber into a first chamber and into a second chamber;

wherein at least one wall of said walls that enclose said acoustic chamber comprises portions that form an external vent to said second chamber;

a first speaker mounted within said partitioning wall, wherein a front portion of said first speaker has access to said first chamber and a back portion of said first speaker has access to said second chamber; and a second speaker mounted within one of said walls that enclose said acoustic chamber, wherein a front portion of said second speaker has access to air outside said speaker box

and a back portion of said second speaker has access to said first chamber; wherein said second speaker enhances acoustical performance of said acoustic chamber of said acoustical enclosure by extending a range of low frequency response of said acoustical enclosure to approximately thirty Hertz.

10. An acoustical enclosure as claimed in Claim 9 wherein said partitioning wall comprises portions that form an uncovered internal vent between said first chamber and said second chamber.

11. A method for enhancing acoustical performance of a dual chamber acoustical enclosure, said method comprising the steps of:

extending a range of low frequency response of said dual chamber acoustical enclosure to approximately thirty Hertz by placing a first speaker within a partitioning wall that separates a first chamber and a second chamber of said dual chamber acoustical enclosure, wherein a front portion of said first speaker has access to said first chamber and a back portion of said first speaker has access to said second chamber of said dual chamber acoustical enclosure; and placing a second speaker within a wall of said first chamber of said dual chamber acoustical enclosure, wherein a front portion of said second speaker has access to air outside said dual chamber acoustical enclosure and a back portion of said second speaker has access to said first chamber of said dual chamber acoustical enclosure;

wherein at least one wall of said walls that enclose said acoustic chamber comprises portions that form an external vent to said second chamber.

12. A method as claimed in Claim 11 further comprising the step of:

electrically connecting said first speaker and said second speaker in phase.

13. A method as claimed in Claim 11 further comprising the step of:

placing an uncovered internal vent in said partitioning wall between said first chamber and said second chamber.

14. A method as claimed in Claim 11 further comprising the step of:

effectively increasing a volume of said first chamber due to the presence of said secondspeaker within said wall of said first chamber of said dual chamber acoustical enclosure.

15. A method as claimed in Claim 14 further comprising the step of:

placing an uncovered internal vent in said partitioning wall between said first chamber and said second chamber.

16. A method as claimed in Claim 12 further comprising the step of:

placing an uncovered internal vent in said partitioning wall between said first chamber and said second chamber.

17. A method as claimed in Claim 12 further comprising the step of:

effectively increasing a volume of said first chamber due to the presence of said second speaker within said wall of said first chamber of said dual chamber acoustical enclosure.

18. A method as claimed in Claim 17 further comprising the step of:

placing an uncovered internal vent in said partitioning wall between said first chamber and said second chamber.

19. An acoustical enclosure as claimed in Claim 9 wherein said first speaker and said second speaker are connected in phase electrically.

20. An acoustical enclosure as claimed in Claim 19 wherein said partitioning wall comprises portions that form an uncovered internal vent between said first chamber and said second chamber.